Having thus described the invention, what is claimed as new and secured by Letters Patent is:

1. A ranging sensor apparatus for detecting a disturbance at a determinable portion along a length of optical fiber, said apparatus comprising:

a transmitter leg for launching a pulsed polarized optical signal;

a sensor leg for carrying a portion of said polarized optical signal within said optical fiber; and

a receiver leg for accepting a portion of a backscattered optical signal from said sensor leg;

wherein said backscattered optical signal provides polarization change and timing information relative to said pulsed polarized optical signal sufficient to determine a location of a disturbance along said optical fiber.

2. The apparatus as claimed in Claim 1, wherein

said transmitter leg includes a polarized pulsed optical source,

said sensor leg includes a length of sensing optical fiber responsive to said disturbance,

said receiver leg includes a polarizer and a receiver for processing a signal received from said length of sensing optical fiber, and

said transmitter leg, said receiver leg, and said sensor leg are coupled together via a directional coupler.

3. The apparatus as claimed in Claim 1, wherein

said transmitter leg includes a transmitter, an isolator, a polarization controller, and a polarizer,

said sensor leg includes an optical amplifier, a polarization mode dispersion compensator, and a length of sensing optical fiber responsive to said disturbance,

said receiver leg includes a polarization splitter and a plurality of receivers for processing a signal received from said length of sensing optical fiber, and

said transmitter leg, said receiver leg, and said sensor leg are coupled together via a circulator.

4. The apparatus as claimed in Claim 3, wherein said sensor leg includes more than one said optical amplifier and more than one said polarization mode dispersion compensator.

5. The apparatus as claimed in any of Claims 1, 2, 3, or 4, wherein said apparatus is capable of coupling to an optical telecommunications cable in order to detect tampering with said optical telecommunications cable.

6. The apparatus as claimed in any of Claims 1, 2, 3, or 4, wherein said apparatus is capable of coupling to a non-ranging perimeter security sensing cable in order to detect disturbances along said non-ranging sensor cable.

7. The apparatus as claimed in Claim 6, wherein said non-ranging perimeter security sensing cable is optically based.

8. The apparatus as claimed in Claim 6, wherein said non-ranging perimeter security sensing cable is electrically based.

9. The apparatus as claimed in Claim 1 further including an optical switch located between said sensor leg and both said transmitter leg and said receiver leg such that multiple optical fibers are capable of being sensed.

10. A method of detecting a disturbance at a determinable portion along a length of optical fiber using backscattered optical signals that provide polarization change and timing information sufficient to determine a location of said disturbance, said method comprising:

capturing a predetermined number of reflected polarized signal traces from an optical fiber;

digitally filtering said predetermined number of reflected polarized signal traces to form a plurality of digitally filtered traces;

averaging said digitally filtered traces to form an average trace;

obtaining a disturbance trace from said optical fiber; and,

comparing said disturbance trace to said average trace so as to determine a disturbance at a portion of said optical fiber.

11. The method as claimed in Claim 10 wherein said obtaining step includes digitally filtering and averaging one or more disturbance traces.

12. A hybrid audio/location sensor apparatus for detecting a disturbance at a determinable portion along a length of cabling including a locating optical fiber and a non-locating sensor cable, said apparatus comprising:

a transmitter leg for launching a pulsed polarized optical signal;

a sensor leg for carrying a portion of said polarized optical signal into said optical fiber;

a receiver leg for accepting a portion of a backscattered optical signal from said sensor leg; and

an signal processor for providing a signal response output including audio indicative of a disturbance along said non-locating sensor cable;

wherein said backscattered optical signal provides polarization change and timing information relative to said pulsed polarized optical signal sufficient to determine a location of a disturbance along said optical fiber.

13. The hybrid audio/location sensor apparatus as claimed in Claim 12 wherein said signal response output and said polarization change and timing information are processed together to provide enhanced detection, location, and classification of said disturbances.

14. A hybrid audio/location sensor cable capable of detecting a disturbance at a determinable portion along a length thereof, said hybrid cable comprising:

a locating optical fiber for carrying a backscattered optical signal providing polarization change and timing information relative to a pulsed polarized optical signal sufficient to determine a location of a disturbance along said locating optical fiber; and

a non-locating sensor cable for generating an electrical signal capable of being processed into an audio output indicative of a disturbance along said non-locating sensor cable;

wherein said locating optical fiber and said non-locating sensor cable are physically integrated within a single jacketing.

15. The hybrid cable as claimed in Claim 14 wherein said non-locating sensor cable is an optical fiber.

16. The hybrid cable as claimed in Claim 14 wherein said non-locating sensor cable is electrically based.

17. A hybrid audio/location sensor cable capable of detecting a disturbance at a determinable portion along a length thereof, said hybrid cable comprising:

a locating optical fiber for carrying a backscattered optical signal providing polarization change and timing information relative to a pulsed polarized optical signal sufficient to determine a location of a disturbance along said locating optical fiber; and

a non-locating sensor cable for modifying an electrical signal capable of being processed into an audio output indicative of a disturbance along said non-locating sensor cable;

wherein said locating optical fiber and said non-locating sensor cable are physically integrated within a single jacketing.

18. The hybrid cable as claimed in Claim 17 wherein said non-locating sensor cable is an optical fiber.

19. The hybrid cable as claimed in Claim 17 wherein said non-locating sensor cable is electrically based.